

ABSTRACT OF THE DISCLOSURE

A gel electrolyte in which nonaqueous electrolyte solution obtained by dissolving electrolyte salt containing Li in a nonaqueous solvent is gelled by a matrix polymer including a copolymer as a main component which contains vinylidene fluoride as a monomer unit. The copolymer employed as the matrix polymer is carboxylic acid modified polyvinylidene fluoride into which a structure formed by esterifying a part or all of a carboxyl group, a carboxylic acid or an acetic anhydride structure is introduced. The carboxylic acid modified polyvinylidene fluoride can dissolve and retain therein a solvent of low viscosity having a low boiling point. Therefore, the carboxylic acid modified polyvinylidene fluoride is used as a matrix polymer to improve the ionic conductivity of the gel electrolyte at low temperature. Thus, a low temperature characteristic is improved and a cyclic characteristic and a load characteristic are also improved.